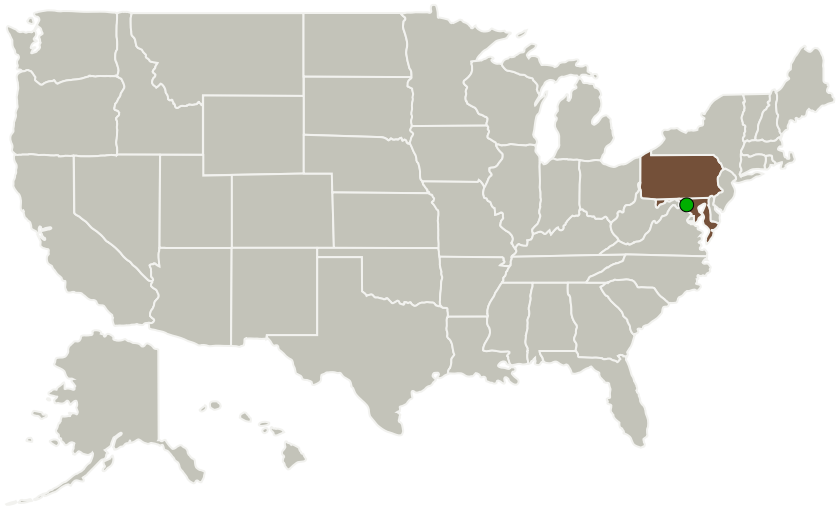
Ultraprecision Pointing Accuracy for SmallSat/CubeSat Attitude Control Systems, Phase II

Completed Technology Project (2015 - 2017)

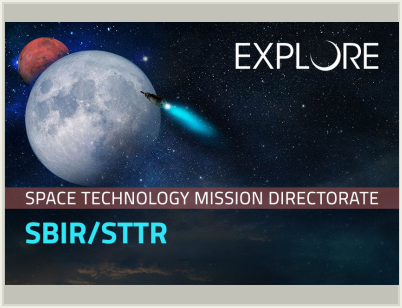
Project Introduction

The Phase I program concluded with the successful demonstration of a piezo enhanced pointing system targeted to the CubeSat class of satellites. The Phase I program results also surpassed the Phase I goals allowing the proposed Phase II program to further push the capabilities and design of the approach. The main objective of the Phase II program is to further quantify the performance of the Attitude Control Piezo Adaptor (ACPA) and to expand it beyond the single axis Phase I testbed into a fully characterized three-axes prototype. In addition, the Phase I analytical models will be enhanced into the three-axes system and utilized in the modeling, design, and testing of the control algorithms. QorTek plans to team with Boeing Huntington Beach to fully test and quantify the performance of the three axis prototype.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
QorTek Inc	Lead Organization	Industry Small Disadvantaged Business (SDB)	Williamsport, Pennsylvania
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland



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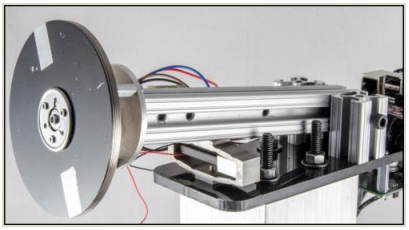
Primary U.S. Work Locations	
Maryland	Pennsylvania

Images



Briefing Chart
Ultraprecision Pointing Accuracy for SmallSat/CubeSat Attitude Control Systems Briefing Chart
(https://techport.nasa.gov/image/136199)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
QorTek Inc

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

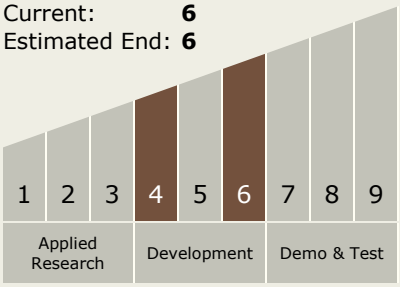
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Gregory M Bower

Technology Maturity (TRL)

Start: **4**
Current: **6**
Estimated End: **6**



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Technology Areas

Primary:

- TX17 Guidance, Navigation, and Control (GN&C)
  - TX17.4 Attitude Estimation Technologies
    - TX17.4.3 Attitude Estimation Sensors

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System